UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,585	01/09/2002	Joseph W. Niesen	7784-000328	6625

27572 7590 12/03/2003

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
PHILPOTT, JUSTIN M	
ART UNIT	**PAPER NUMBER**
2665	3

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/042,585	NIESEN, JOSEPH W.	
	Examiner	Art Unit	
	Justin M Philpott	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: "despreads an data" (line 2) should be changed to "despreads data". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent App. Pub. No. 2002/0018527 A1 by Vanderaar et al. in view of U.S. Patent No. 5,751,761 to Gilhousen.

Regarding claims 1, 16, 19 and 33, Vanderaar teaches a communication system for mobile platforms, comprising: a first mobile platform including a first transceiver that is assigned a first IP address and a second mobile platform including a second transceiver that is assigned a second IP address (e.g., see paragraphs 0006 and 0007 regarding an application for a system having a plurality of mobile users accessing the Internet via satellite communication packet-based systems wherein the users each have a unique identification number derived via conventional methods, implicitly including IP addresses); a ground station (e.g., satellite hub, see paragraph 0025) that transmits a forward link that contains first and second IP packet data (e.g.,

see paragraph 0037 regarding IP packets) that is modulated by an orthogonal spreader (e.g., see paragraph 0021 regarding OFDM implicitly comprising an orthogonal spreader); and a satellite that relays the forward link from the ground station to the first and second mobile platforms (e.g., see paragraph 0008). Furthermore, Vanderaar teaches adjusting operating parameters for the link according to link conditions (e.g., see FIG. 2 and paragraph 0024).

However, Vanderaar may not specifically disclose the adjusting operating parameters comprises adjusting the length of the orthogonal codes via a variable length orthogonal spreader wherein first and second IP packet data have different information data rates.

Gilhousen teaches applications for mobile communication systems such as that of Vanderaar, and specifically, teaches modulating by a variable length orthogonal spreader (e.g., see col. 3, lines 10-18; col. 8, lines 38-44; col. 9, line 41 – col. 11, line 62; and col. 19, lines 61-65) and packet data have different information data rates (e.g., see col. 3, lines 5-8). The teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 2 and 20, Gilhousen teaches organizing groups of packets based on the information data rate by assigning data to specific sequence codes in accordance with their data rates (e.g., see col. 11, lines 29-62). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the

invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 3, 7, 21 and 25, Gilhousen teaches forward error correction encoding and decoding is performed (e.g., see col. 9, lines 17-29 and col. 18, lines 54-64). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 4-6 and 22-24, Gilhousen further teaches a PN spreader spreads an output of the VLO spreader (e.g., see col. 8, lines 38-48) and a VLO despreader and PN despreader despreads data received (e.g., see col. 18, lines 39-53 regarding diversity combiner and decoder circuitry). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 8 and 26, Vanderaar teaches an improved system for selecting parameters to optimize specific desired link margins (e.g., see paragraphs 0006-0008), however,

may not specifically disclose selecting first and second VLO spreading codes. Gilhousen teaches selecting a first and second VLO spreading code to optimize a first and second link margin elements (e.g., data rates) of first and second transceivers, respectively (e.g., see col. 9, lines 41-55 regarding selecting codes of varying length based on the desired data rate). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 9, 10, 12-14, 27, 28, 30 and 31, Vanderaar teaches transceivers include a feedback circuit (e.g., shown generally at 200, 202, 204 and 206 in FIG. 2) that generates a link margin estimate for the IP packets received by the transceivers and ground station receives link margin estimates (e.g., at 208) and adjusts information parameters of subsequent IP packets (e.g., at 210). As discussed above, while Vanderaar may not specifically disclose adjusting specifically data rates or VLO spreading codes, Gilhousen teaches selecting VLO spreading codes in accordance with selected data rates (e.g., see col. 9, lines 41-55 regarding selecting codes of varying length based on the desired data rate). Further, as discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar, whereby information data

rates are adjusted in response to received link margin estimates, in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency. Further, regarding claims 14 and 31, Gilhousen teaches FEC coding may be implemented (e.g., see col. 9, lines 17-29) and while Gilhousen may not specifically disclose specifically FEC coding is adjusted to optimize link margins, Vanderaar in view of Gilhousen teach adjusting coding to optimize link margins as discussed above. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to adjust the FEC coding of Gilhousen in view of Vanderaar in view of Gilhousen teaching adjusting coding to optimize link margins.

Regarding claims 11 and 29, while Vanderaar in view of Gilhousen may not specifically disclose feedback information includes specifically a bit energy signal and a noise estimate signal, Examiner takes official notice that detecting and transmitting signals comprising bit energy and noise estimate is well known in the art of mobile communications.

Regarding claims 15 and 32, Gilhousen teaches the VLO despreader responds to VLO timing sequence data contained in an overhead portion of an output of the PN despreader (e.g., see col. 17, line 65 – col. 18, line 64 regarding timing and sequence control signals). As discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar, whereby information data rates are adjusted in response to received link margin estimates, in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency.

Regarding claims 17 and 34, Vanderaar teaches the forward link includes broadcast frames transmitted concurrently (e.g., see paragraph 0034 regarding broadcast).

Regarding claims 18 and 35, as discussed above Gilhousen teaches data have distinct VLO codes (e.g., see col. 11, line 29 – col. 12, line 65). Also as discussed above, the teachings of Gilhousen provide a technique for enabling orthogonal coexistence of high and low data rate communications for increased system efficiency (e.g., see col. 2, line 45 – col. 3, line 30). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Gilhousen to the system of Vanderaar, whereby information data rates are adjusted in response to received link margin estimates, in order to enable orthogonal coexistence of high and low data rate communications for increased system efficiency. Further, while Vanderaar in view of Gilhousen may not specifically disclose broadcast data have substantially the same signal strength, Examiner takes official notice that it is well known in the art of mobile communications for broadcast data to have substantially the same signal strength.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,103,459 to Gilhousen et al. discloses methods for mobile communications, and U.S. Patent No. 6,163,524 to Magnusson et al. discloses variable rate and spreading factors in mobile communication systems.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.305.4750.

JMP
Justin M Philpott

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600